

Appln. No. 10/799,008

Attorney Docket No. 10541-1941

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APR 23 2007

## I. Amendments to the Claims

1. (Cancelled).

2. (Currently Amended): ~~The resonator according to claim 1, A resonator for attenuating acoustic pressure pulsation in an air passage, the resonator comprising:~~

a neck attached in a side branch configuration with the air passage,  
the neck having a neck length;

at least one wall forming a resonator chamber;

a first member located within the resonator chamber, the first member cooperating with the at least one wall to form a resonator volume; and

a first actuator coupled to the first member, and configured to translate the first member changing the resonator volume and the neck length

wherein the first actuator includes a motor and a crank shaft.

3. (Withdrawn): The resonator according to claim 1, wherein the first actuator includes a motor and a screw.

4. (Currently Amended): The resonator according to claim [[1]] 2, further comprising a second actuator coupled with the first member and the neck.

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5. (Original): The resonator according to claim 4, wherein the second actuator is configured to vary the neck length.

6. (Original): The resonator according to claim 5, wherein the second actuator includes a motor and a screw.

7. (Currently Amended): The resonator according to claim ~~[[1]]~~ 2, further comprising a second member coupled to the neck and configured to change the resonator volume in relation to the neck length.

8. (Withdrawn): The resonator according to claim 7, further comprising a biasing member coupled to the second member.

9. (Withdrawn): The resonator according to claim 8, wherein the biasing member is configured to bias the second member away from the wall thereby reducing the resonator volume.

10. (Withdrawn): The resonator according to claim 9, further comprising a stop attached to the at least one wall and configured to define a default position of the second member corresponding to a maximum resonator volume reduction due to the second member.

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11. (Withdrawn): The resonator according to claim 1, wherein the first member is configured to push against the second member thereby decreasing the neck length and the resonator volume.

12. (Original): A resonator for attenuating acoustic pressure pulsation from an air passage, the resonator comprising:

a neck attached in a side branch configuration with the air passage, the neck having a neck length;

at least one wall of the resonator forming a resonator chamber;

a first member located within the resonator chamber, the first member cooperating with the at least one wall to form a resonator volume;

a first actuator coupled to the first member and configured to translate the first member changing the resonator volume and the neck length; and

a second actuator coupled with the first member and the neck.

13. (Original): The resonator according to claim 12, wherein the second actuator is configured to vary the neck length.

14. (Original): The resonator according to claim 12, wherein the second actuator includes a motor and a screw.

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15. (Original): A resonator for attenuating acoustic vibration from an air passage, the resonator comprising:

a neck attached in a side branch configuration with the air passage, the neck having a neck length;

at least one wall of the resonator forming a resonator chamber;

a first member located within the resonator chamber, the first member cooperating with the at least one wall to form a resonator volume;

an actuator coupled to the first member and configured to translate the first member changing the resonator volume and the neck length; and

a second member coupled to the neck and configured to change the resonator volume in relation to the neck length.

16. (Withdrawn): The resonator according to claim 15, further comprising a biasing member coupled to the second member.

17. (Withdrawn): The resonator according to claim 15, wherein the biasing member is configured to bias the second member away from the wall thereby reducing the resonator volume.

18. (Withdrawn): The resonator according to claim 15, further comprising a stop attached to the at least one wall and configured to define a default position of

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the second member corresponding to a maximum resonator volume reduction due to the second member.

19. (Withdrawn): The resonator according to claim 15, wherein the first member is configured to push against the second member thereby decreasing the neck length and the resonator volume.

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